WHAT IS CLAIMED IS:

1. In an optical wavelength multiplex transmission method for multiplexing signal light waves of a plurality of channels having different wavelengths and transmitting the multiplexed signal light using an optical fiber, the improvement wherein:

a four wave mixing suppressing guard band of a predetermined bandwidth including a zero-dispersion wavelength of said optical fiber is set; and

the signal light waves of the plurality of channels to be multiplexed are arranged on one of a shorter wavelength side and a longer wavelength side outside the guard band.

2. In an optical wavelength multiplex transmission method for multiplexing signal light waves of a plurality of channels having different wavelengths and transmitting the multiplexed signal light using an optical fiber, the improvement wherein:

a four wave mixing suppressing guard band of a predetermined bandwidth including a zero-dispersion wavelength of said optical fiber is set; and

the signal light waves of the plurality of channels to be multiplexed are arranged on the opposite

sides of a shorter wavelength side and a longer wavelength side outside the guard band.

3. An optical wavelength multiplex transmission method as claimed in claim 2, wherein the bandwidths of the guard bands are set in an asymmetrical relationship on the shorter wavelength side and the longer wavelength side with respect to the zero-dispersion wavelength of said optical fiber.

4. An optical wavelength multiplex transmission method as claimed in claim 3, wherein the channel spacings between adjacent ones of the signal light waves of the plurality of channels are set different on the shorter wavelength side and the longer wavelength side outside the guard band.

5. An optical wavelength multiplex transmission method as claimed in claim 3, wherein the channel spacings between adjacent ones of the signal light waves of the plurality of channels on each of the shorter wavelength side and the longer wavelength side outside the guard band are set to an integral number of times a constant.

6. An optical wavelength multiplex transmission method as claimed in claim 5, wherein the channel spacings between the channels of the signal light waves of the plurality of channels on the opposite sides of the guard band are set to the integral number of times the constant.

7. An optical wavelength multiplex transmission method as claimed in claim 3, wherein the signal light waves of the channels are arranged such that the signal light waves of no pair or only one pair of ones of the channels have dispersion values which have an equal absolute value.

8. In an optical wavelength multiplex transmission method for multiplexing signal light waves of a plurality of channels having different wavelengths and transmitting the multiplexed signal light using an optical fiber, the improvement wherein:

taking a zero-dispersion wavelength λ_0 of said optical fiber and a zero-dispersion wavelength deviation range $\pm\Delta\lambda_0$ of said optical fiber in its longitudinal direction into consideration, the signal light waves of the plurality of channels to be multiplexed are arranged on a shorter wavelength side than a shorter wavelength

end $\lambda_0 - \Delta\lambda_0$ of the zero-dispersion wavelength deviation range of said optical fiber.

9. An optical wavelength multiplex transmission method as claimed in claim 8, wherein a four wave mixing suppressing guard band $\Delta\lambda_g$ is provided on the shorter wavelength side than the shorter wavelength end $\lambda_0 - \Delta\lambda_0$ of the zero-dispersion wavelength deviation range of said optical fiber, and the signal light waves of the plurality of channels are arranged on a shorter wavelength side than a wavelength $\lambda_0 - \Delta\lambda_0 - \Delta\lambda_g$.

10. In an optical wavelength multiplex transmission method for multiplexing signal light waves of a plurality of channels having different wavelengths and transmitting the multiplexed signal light using an optical fiber, the improvement wherein:

taking a zero-dispersion wavelength λ_0 of said optical fiber and a zero-dispersion wavelength deviation range $\pm\Delta\lambda_0$ of said optical fiber in its longitudinal direction into consideration, the signal light waves of the plurality of channels to be multiplexed are arranged on a longer wavelength side than a longer wavelength end $\lambda_0 + \Delta\lambda_0$ of the ~~zero-dispersion wavelength~~ deviation range of said optical fiber.

11. An optical wavelength multiplex transmission method as claimed in claim 10, wherein a four wave mixing suppressing guard band $\Delta\lambda_g$ is provided on the longer wavelength side than the longer wavelength end $\lambda_0 + \Delta\lambda_0$ of the zero-dispersion wavelength deviation range of said optical fiber, and the signal light waves of the plurality of channels are arranged on a longer wavelength side than a wavelength $\lambda_0 + \Delta\lambda_0 + \Delta\lambda_g$.

12. An optical wavelength multiplex transmission method as claimed in claim 9, wherein the signal light waves of the plurality of channels are arranged within a transmissible band defined by an allowable dispersion value determined from a synergetic effect of self phase modulation and group velocity dispersion in said optical fiber.

13. An optical wavelength multiplex transmission method as claimed in claim 11, wherein the signal light waves of the plurality of channels are arranged within a transmissible band defined by an allowable dispersion value determined from a synergetic effect of self phase modulation and group velocity dispersion in said optical fiber.

14. An optical wavelength multiplex transmission method as claimed in claim 12, wherein the signal light waves of the plurality of channels are arranged outside the transmissible band defined by the allowable dispersion value determined from the synergetic effect of self phase modulation and group velocity dispersion in said optical fiber, and the zero dispersion wavelength λ_0 of said optical fiber is apparently shifted using an optical dispersion compensator to apparently arrange the signal light waves of the plurality of channels into the transmissible band.

15. An optical wavelength multiplex transmission method as claimed in claim 13, wherein the signal light waves of the plurality of channels are arranged outside the transmissible band defined by the allowable dispersion value determined from the synergetic effect of self phase modulation and group velocity dispersion in said optical fiber, and the zero dispersion wavelength λ_0 of said optical fiber is apparently shifted using an optical dispersion compensator to apparently arrange the signal light waves of the plurality of channels into the transmissible band.

16. An optical wavelength multiplex transmission method as claimed in claim 12, wherein, taking a dispersion compensation amount deviation range $\pm\delta\lambda_{DC}$ of said optical dispersion compensator into consideration, a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same by the dispersion compensation amount deviation range $\delta\lambda_{DC}$ on the opposite sides of the longer wavelength side and the shorter wavelength side.

17. An optical wavelength multiplex transmission method as claimed in claim 13, wherein, taking a dispersion compensation amount deviation range $\pm\delta\lambda_{DC}$ of said optical dispersion compensator into consideration, a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same by the dispersion compensation amount deviation range $\delta\lambda_{DC}$ on the opposite sides of the longer wavelength side and the shorter wavelength side.

18. An optical wavelength multiplex transmission method as claimed in claim 14, wherein, taking a dispersion compensation amount deviation range

$\pm\delta\lambda_{DC}$ of said optical dispersion compensator into consideration, a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same by the dispersion compensation amount deviation range $\delta\lambda_{DC}$ on the opposite sides of the longer wavelength side and the shorter wavelength side.

19. An optical wavelength multiplex transmission method as claimed in claim 15, wherein, taking a dispersion compensation amount deviation range $\pm\delta\lambda_{DC}$ of said optical dispersion compensator into consideration, a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same by the dispersion compensation amount deviation range $\delta\lambda_{DC}$ on the opposite sides of the longer wavelength side and the shorter wavelength side.

20. An optical wavelength multiplex transmission method as claimed in claim 12, wherein the signal light waves of the plurality of channels are arranged in a gain band of an optical amplifier connected to said optical fiber.

21. An optical wavelength multiplex transmission method as claimed in claim 13, wherein the signal light waves of the plurality of channels are arranged in a gain band of an optical amplifier connected to said optical fiber.

22. An optical wavelength multiplex transmission method as claimed in claim 14, wherein the signal light waves of the plurality of channels are arranged in a gain band of an optical amplifier connected to said optical fiber.

23. An optical wavelength multiplex transmission method as claimed in claim 15, wherein the signal light waves of the plurality of channels are arranged in a gain band of an optical amplifier connected to said optical fiber.

24. An optical wavelength multiplex transmission method as claimed in claim 16, wherein the signal light waves of the plurality of channels are arranged in a gain band of an optical amplifier connected to said optical fiber.

25. An optical wavelength multiplex transmission method as claimed in claim 17, wherein the signal light waves of the plurality of channels are arranged in a gain band of an optical amplifier connected to said optical fiber.

26. An optical wavelength multiplex transmission method as claimed in claim 18, wherein the signal light waves of the plurality of channels are arranged in a gain band of an optical amplifier connected to said optical fiber.

27. An optical wavelength multiplex transmission method as claimed in claim 19, wherein the signal light waves of the plurality of channels are arranged in a gain band of an optical amplifier connected to said optical fiber.

28. An optical wavelength multiplex transmission method as claimed in claim 12, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of

channels.

29. An optical wavelength multiplex transmission method as claimed in claim 13, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

30. An optical wavelength multiplex transmission method as claimed in claim 14, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

31. An optical wavelength multiplex transmission method as claimed in claim 15, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of

channels.

32. An optical wavelength multiplex transmission method as claimed in claim 16, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

33. An optical wavelength multiplex transmission method as claimed in claim 17, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

34. An optical wavelength multiplex transmission method as claimed in claim 18, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of

channels.

35. An optical wavelength multiplex transmission method as claimed in claim 19, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

36. An optical wavelength multiplex transmission method as claimed in claim 20, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

37. An optical wavelength multiplex transmission method as claimed in claim 21, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of

channels.

38. An optical wavelength multiplex transmission method as claimed in claim 22, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

39. An optical wavelength multiplex transmission method as claimed in claim 23, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

40. An optical wavelength multiplex transmission method as claimed in claim 24, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of

channels.

41. An optical wavelength multiplex transmission method as claimed in claim 25, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

42. An optical wavelength multiplex transmission method as claimed in claim 26, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of channels.

43. An optical wavelength multiplex transmission method as claimed in claim 27, wherein a band $\Delta\lambda_{WDM}$ within which the signal light waves of the plurality of channels are to be arranged is set expanding the same in accordance with optical wavelength variations of the signal light waves of the plurality of

channels.

44. An optical dispersion compensation method for compensating for a dispersion amount of an optical transmission system which includes a transmitter, a repeater and a receiver and transmits signal light from said transmitter to said receiver by way of said repeater, comprising the steps of:

preparing in advance two kinds of optical dispersion compensator units having dispersion amounts having different positive and negative signs;

inserting the two kinds of optical dispersion compensator units separately into said optical transmission system; and

selecting one of the two kinds of optical dispersion compensator units which provides a better transmission characteristic to said optical transmission system and incorporating the selected optical dispersion compensator unit into said optical transmission system.

45. An optical dispersion compensation method for compensating for a dispersion amount of an optical transmission system which includes a transmitter, a repeater and a receiver and transmits signal light from said transmitter to said receiver by way of said

repeater, comprising the steps of:

preparing in advance two kinds of optical dispersion compensator units having dispersion amounts having different positive and negative signs;

measuring a dispersion amount of said optical transmission system; and

selecting one of the two kinds of optical dispersion compensator units which has a dispersion amount whose sign is opposite to that of a measured dispersion amount and incorporating the selected optical dispersion compensator unit into said optical transmission system.

46. An optical dispersion compensation method for compensating for a dispersion amount of an optical transmission system which includes a transmitter, a repeater and a receiver and transmits signal light from said transmitter to said receiver by way of said repeater, comprising the steps of:

preparing in advance a plurality of kinds of optical dispersion compensator units having different dispersion amounts having different positive and negative signs;

selectively inserting the plurality of kinds of optical dispersion compensator units into said optical transmission system changing the installation number and

the combination of the optical dispersion compensator units; and

selecting an installation number and a combination of the optical dispersion compensator units from within the plurality of kinds of optical dispersion compensator units which provide a good transmission characteristic to said optical transmission system and incorporating the optical dispersion compensator units of the selected installation number and combination into said optical transmission system.

47. An optical dispersion compensation method for compensating for a dispersion amount of an optical transmission system which includes a transmitter, a repeater and a receiver and transmits signal light from said transmitter to said receiver by way of said repeater, comprising the steps of:

preparing in advance a plurality of kinds of optical dispersion compensator units having different dispersion amounts having different positive and negative signs;

measuring a dispersion amount of said optical transmission system; and

selecting an installation number and a combination of the optical dispersion compensator units from within the plurality of kinds of optical dispersion

compensator units, with which dispersion values of the signal light waves fall within a transmissible dispersion value range, in accordance with a measured dispersion value and incorporating the optical dispersion compensator units of the selected installation number and combination into said optical transmission system.

48. An optical dispersion compensation method as claimed in claim 44, wherein the optical dispersion compensator units are additionally incorporated into at least one of said transmitter, said repeater and said receiver of said optical transmission system to incorporate the optical dispersion compensator units into said optical transmission system.

49. An optical dispersion compensation method as claimed in claim 45, wherein the optical dispersion compensator units are additionally incorporated into at least one of said transmitter, said repeater and said receiver of said optical transmission system to incorporate the optical dispersion compensator units into said optical transmission system.

50. An optical dispersion compensation method as claimed in claim 46, wherein the optical dispersion compensator units are additionally incorporated into at least one of said transmitter, said repeater and said receiver of said optical transmission system to incorporate the optical dispersion compensator units into said optical transmission system.

51. An optical dispersion compensation method as claimed in claim 47, wherein the optical dispersion compensator units are additionally incorporated into at least one of said transmitter, said repeater and said receiver of said optical transmission system to incorporate the optical dispersion compensator units into said optical transmission system.

52. An optical dispersion compensation method as claimed in claim 50, wherein, when said optical transmission system performs optical wavelength multiplex transmission to multiplex and transmit signal light waves of a plurality of channels having different wavelengths, the signal light waves are demultiplexed for each one wave by wavelength demultiplexing and the optical dispersion compensator units are provided for the individual channels of the signal light waves of the

wavelengths in said optical transmission system.

53. An optical dispersion compensation method as claimed in claim 51, wherein, when said optical transmission system performs optical wavelength multiplex transmission to multiplex and transmit signal light waves of a plurality of channels having different wavelengths, the signal light waves are demultiplexed for each one wave by wavelength demultiplexing and the optical dispersion compensator units are provided for the individual channels of the signal light waves of the wavelengths in said optical transmission system.

54. An optical dispersion compensation method as claimed in claim 50, wherein, when said optical transmission system performs optical wavelength multiplex transmission to multiplex and transmit signal light waves of a plurality of channels having different wavelengths, the signal light waves are demultiplexed for each plurality of waves and the optical dispersion compensator units are provided for the individual channel groups each including a plurality of signal light waves in said optical transmission system.

55. An optical dispersion compensation method as claimed in claim 51, wherein, when said optical transmission system performs optical wavelength multiplex transmission to multiplex and transmit signal light waves of a plurality of channels having different wavelengths, the signal light waves are demultiplexed for each plurality of waves and the optical dispersion compensator units are provided for the individual channel groups each including a plurality of signal light waves in said optical transmission system.

56. An optical dispersion compensation method as claimed in claim 50, wherein, when said optical transmission system performs optical wavelength multiplex transmission to multiplex and transmit signal light waves of a plurality of channels having different wavelengths, the optical dispersion compensator units are provided for all of the signal light waves of the plurality of channels in said optical transmission system.

57. An optical dispersion compensation method as claimed in claim 51, wherein, when said optical transmission system performs optical wavelength multiplex transmission to multiplex and transmit signal

light waves of a plurality of channels having different wavelengths, the optical dispersion compensator units are provided for all of the signal light waves of the plurality of channels in said optical transmission system.

58. An optical dispersion compensation method as claimed in claim 50, wherein each of the optical dispersion compensator units is additionally provided with an optical amplifier for compensating for an optical loss of the optical dispersion compensator unit.

59. An optical dispersion compensation method as claimed in claim 51, wherein each of the optical dispersion compensator units is additionally provided with an optical amplifier for compensating for an optical loss of the optical dispersion compensator unit.

60. An optical dispersion compensation method as claimed in claim 52, wherein each of the optical dispersion compensator units is additionally provided with an optical amplifier for compensating for an optical loss of the optical dispersion compensator unit.

61. An optical dispersion compensation method as claimed in claim 53, wherein each of the optical dispersion compensator units is additionally provided with an optical amplifier for compensating for an optical loss of the optical dispersion compensator unit.

62. An optical dispersion compensation method as claimed in claim 54, wherein each of the optical dispersion compensator units is additionally provided with an optical amplifier for compensating for an optical loss of the optical dispersion compensator unit.

63. An optical dispersion compensation method as claimed in claim 55, wherein each of the optical dispersion compensator units is additionally provided with an optical amplifier for compensating for an optical loss of the optical dispersion compensator unit.

64. An optical dispersion compensation method as claimed in claim 56, wherein each of the optical dispersion compensator units is additionally provided with an optical amplifier for compensating for an optical loss of the optical dispersion compensator unit.

65. An optical dispersion compensation method as claimed in claim 57, wherein each of the optical dispersion compensator units is additionally provided with an optical amplifier for compensating for an optical loss of the optical dispersion compensator unit.

66. An optical dispersion compensation method as claimed in claim 58, wherein a pair of optical amplifiers are additionally provided at a preceding stage and a next stage to each of the optical dispersion compensator units.

67. An optical dispersion compensation method as claimed in claim 59, wherein a pair of optical amplifiers are additionally provided at a preceding stage and a next stage to each of the optical dispersion compensator units.

68. An optical dispersion compensation method as claimed in claim 60, wherein a pair of optical amplifiers are additionally provided at a preceding stage and a next stage to each of the optical dispersion compensator units.

69. An optical dispersion compensation method as claimed in claim 61, wherein a pair of optical amplifiers are additionally provided at a preceding stage and a next stage to each of the optical dispersion compensator units.

70. An optical dispersion compensation method as claimed in claim 62, wherein a pair of optical amplifiers are additionally provided at a preceding stage and a next stage to each of the optical dispersion compensator units.

71. An optical dispersion compensation method as claimed in claim 63, wherein a pair of optical amplifiers are additionally provided at a preceding stage and a next stage to each of the optical dispersion compensator units.

72. An optical dispersion compensation method as claimed in claim 64, wherein a pair of optical amplifiers are additionally provided at a preceding stage and a next stage to each of the optical dispersion compensator units.

73. An optical dispersion compensation method as claimed in claim 65, wherein a pair of optical amplifiers are additionally provided at a preceding stage and a next stage to each of the optical dispersion compensator units.

74. An optical dispersion compensation method as claimed in claim 58, wherein the optical dispersion compensator units are constructed as a package wherein they are mounted on a circuit board so that the optical dispersion compensator units are replaced or incorporated in units of a package.

75. An optical dispersion compensation method as claimed in claim 59, wherein the optical dispersion compensator units are constructed as a package wherein they are mounted on a circuit board so that the optical dispersion compensator units are replaced or incorporated in units of a package.

76. An optical dispersion compensation method as claimed in claim 60, wherein the optical dispersion compensator units are constructed as a package wherein they are mounted on a circuit board so that the optical

dispersion compensator units are replaced or incorporated in units of a package.

77. An optical dispersion compensation method as claimed in claim 61, wherein the optical dispersion compensator units are constructed as a package wherein they are mounted on a circuit board so that the optical dispersion compensator units are replaced or incorporated in units of a package.

78. An optical dispersion compensation method as claimed in claim 62, wherein the optical dispersion compensator units are constructed as a package wherein they are mounted on a circuit board so that the optical dispersion compensator units are replaced or incorporated in units of a package.

79. An optical dispersion compensation method as claimed in claim 63, wherein the optical dispersion compensator units are constructed as a package wherein they are mounted on a circuit board so that the optical dispersion compensator units are replaced or incorporated in units of a package.

80. An optical dispersion compensation method as claimed in claim 64, wherein the optical dispersion compensator units are constructed as a package wherein they are mounted on a circuit board so that the optical dispersion compensator units are replaced or incorporated in units of a package.

81. An optical dispersion compensation method as claimed in claim 65, wherein the optical dispersion compensator units are constructed as a package wherein they are mounted on a circuit board so that the optical dispersion compensator units are replaced or incorporated in units of a package.

82. An optical dispersion compensation method for compensating for a dispersion amount of an optical transmission system which includes a transmitter, a repeater and a receiver and transmits signal light from said transmitter to said receiver by way of said repeater, comprising the steps of:

incorporating, in advance into at least one of said transmitter, said repeater and said receiver of said optical transmission system, a plurality of kinds of optical dispersion compensator units having different dispersion amounts having different positive and

negative signs in such a connected condition as to allow switching of a selective combination of the optical dispersion compensator units by means of switching means; and

operating said switching means to select a suitable combination of the optical dispersion compensator units from within the plurality of types of optical dispersion compensator units and incorporating the optical dispersion compensator units of the selected combination into said optical transmission system.

83. An optical dispersion compensation method as claimed in claim 82, wherein said switching means is operated in response to a control signal from the outside.

84. An optical dispersion compensation method as claimed in claim 83, wherein said switching means is operated in response to a control signal from said receiver to switch the combination of the optical dispersion compensator units while a transmission characteristic of said optical transmission system is measured simultaneously by said receiver to determine a combination of the optical dispersion compensator units which provides an optimum transmission characteristic to

said optical transmission system, and said switching means is operated in response to another control signal from said receiver to switch the combination of the optical dispersion compensator units to the determined combination which provides the optimum transmission characteristic to said optical transmission system.

85. An optical dispersion compensation method as claimed in claim 82, wherein said switching means includes a mechanical switch.

86. An optical dispersion compensation method as claimed in claim 83, wherein said switching means includes a mechanical switch.

87. An optical dispersion compensation method as claimed in claim 84, wherein said switching means includes a mechanical switch.

88. An optical dispersion compensation method as claimed in claim 82, wherein said switching means includes an optical switch.

89. An optical dispersion compensation method as claimed in claim 83, wherein said switching means includes an optical switch.

90. An optical dispersion compensation method as claimed in claim 84, wherein said switching means includes an optical switch.